Attitudes towards code-switching among adult mono- and multilingual language users[1]

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Abstract

The present study investigates inter-individual variation (linked to personality traits, multilingualism and sociobiographical variables) in attitudes towards code-switching (CS) among 2070 multilinguals. Data were collected through an on-line questionnaire. We found that high levels of Tolerance of Ambiguity and Cognitive Empathy, and low levels of Neuroticism are linked with significantly more positive attitudes towards CS. Knowing many languages had a marginally positive effect. A more fine-grained analysis revealed that participants with mid-range global proficiency values were less positive towards CS than those at the lower and higher end of the scale. Participants who grew up in a bilingual family and in an ethnically diverse environment, and currently worked in an ethnically diverse environment had significantly more positive attitudes towards CS. Female participants and those with the lowest and highest levels of education appreciated CS most, and participants in their teens and twenties appreciated CS less than older participants. The findings thus show that the attitudes towards CS are linked to personality, language learning history and current linguistic practices, as well as some sociobiographical variables.

Keywords: code-switching, inter-individual variation, attitudes, Tolerance of Ambiguity, Cognitive Empathy, Neuroticism, Extraversion

Introduction

Language attitudes permeate our everyday lives: people often judge our social status, group membership, intelligence, competence by the way we use language (Garrett 2010). People hold attitudes to language at all its levels, e.g. accent, choice of words, speed of speech grammar, language variety. The vast majority of the existing studies on language attitudes are done on particular languages, language varieties, or certain aspects, such as pronunciation or spelling, of particular languages, usually in sociolinguistic situations where there is a troubled history of language contact and a sharp differentiation of the symbolic values of the languages

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involved. For example, there are studies of language attitudes towards English and other local languages in Hong Kong, India, sub-Saharan Africa and Wales (Garrett 2010). Systematic studies of attitudes toward code-switching (CS) – the alternation and mixing of languages within a conversational utterance – are, as Gardner-Chloros points out (2009: 81-82), few and far between, and most of the existing studies are done in contexts where CS is restricted or forbidden, such as in many language classrooms (Moodley 2007). In this paper, we focus on attitudes CS by multilinguals in a variety of everyday situations.

One of the most noticeable gaps in the literature, both on language attitudes generally and on attitudes towards CS specifically, is the investigation of individual differences in language attitudes, which includes questions such as how different individuals view the same linguistic phenomenon; how the same individual views different linguistic phenomena; and what psychological, historico-cultural, and socio-political conditions would affect inter and intra-speaker variation and change in language attitudes. These questions are crucial because language attitudes differ and change, just as language behaviours differ and change, and the variations and changes reflect changes in society at large as well as in the individual's environment. Understanding what factors affect inter and intra-speaker differences in language attitudes will help us to understand the processes of social change and how individuals in their specific socio-psychological locale respond to social changes. In this article, we want to address individual differences in language attitudes towards CS.

In addition to the theoretical significance of studying such differences, a particular motivation for the present study is our concern over the lack of consideration in experimental design of psycholinguistic studies of CS of inter- and intra-speaker variations in attitudes. Speakers are selected and grouped together according to gender, age, language proficiency, and, occasionally, frequency of CS, but rarely according to their attitudes towards the very linguistic phenomenon that is being studied. Language attitude seems to be treated as essentially a socio-ideological issue that can be dealt with entirely in the discipline of sociolinguistics. Yet, attitude affects behaviour, and the attitude-behaviour correspondence is a psychological process. Socio-ideological factors affect that process of course. But so do individual factors such as personality, emotional state, and experience. At a very general level, CS could be regarded as an achievement strategy by language learners, an identity marker in certain communities, or a snobbish ornament amongst the elite. Furthermore, the evaluation of different types of CS is likely to be different within the same individual in different communicative environments. One person may believe that it is entirely normal to code-switch within her own family but not at all appropriate in the workplace, whereas another may feel that CS is controllable and only occurs when inhibition is temporarily lifted as in anxiety or excitement. These individual differences may have significant effects on the results of psycholinguistic experiments, an issue that is largely under-explored in the current literature. Our study therefore aims to provide some initial evidence of the extent to which language attitudes towards CS vary individually, which we hope will raise awareness amongst researchers of the significance of attitudinal differences in designing future experiments.

The article is structured as follows. We first review the existing research on attitudes towards CS in language contact situations and education. We then introduce the personality traits which we hypothesise to have *a prima*

facie link with attitudes towards CS. Our research instruments include an online questionnaire specially designed for the present study, including items to assess some personality traits. We will describe the design of our empirical study and our hypotheses. Subsequently, we will test four specific research hypotheses with our empirical data. The implications of our findings are discussed in the concluding section.

Studies of attitudes towards CS

A large number of studies have reported pejorative terms for CS such as 'verbal salad' (in Nigeria), 'still colonized' (Morocco), and 'very irritating' (Hong Kong) (see citations in Lawson and Sachdev 2000). Some monolinguals are inclined to dismiss CS as 'gibberish' (Edwards 2004, 78). Even neutral sounding terms such as Tex-Mex, Franglais, Japlish often have negative connotations (78). These terms reflect ideologies of monolingualism and linguistic purism, or one language only (OLON) and one language at a time (OLAT), that lie behind attitudes against CS (Li and Wu 2009). Languages are best kept separate and well formed according to tightly defined monolingual rules. Even bilinguals who code-switch themselves sometime believe that CS is an indication of laziness or poor linguistic proficiency. Chana and Romaine (1984), for example, reported negative attitudes toward CS among Punjabi-English bilinguals in Birmingham, in spite of their almost exclusively using a CS mode. Experimental studies of attitudes towards CS using matched guise techniques largely confirm the negative findings from questionnaires and interviews. Bentahila (1983) found that the majority of the 109 Arabic-French bilinguals in Morocco who took part in the experiment reacted negatively to the CS guise, and their attitudes ranged from pity to disgust. Lawson and Sachdev's (2000) own study of 169 Tunisians found CS to be rated the lowest of all the guises. A similar pattern was uncovered by Berthele (2012) who investigated the influence of different ethnically marked names (Serbian) and code-switches on Swiss teachers' evaluations of pupils' oral proficiency in French as a foreign language. Without CS, texts with a Balkan name were perceived as being superior, but with CS this superiority was lost and the samples got significantly lower assessment scores.

Significantly more studies of attitudes towards CS exist in educational contexts and in child language acquisition. Again the majority of the studies point to negativity (Martin-Jones 2000). But this needs to be interpreted against a background of behavioural norms in these contexts which are in turned driven by linguistic ideology. CS in language teaching has seldom been seen as a facilitating strategy. Instead, it is regarded as a sign of lack of proficiency in the target language. Likewise, CS in young children is often taken as an example of poor cognitive control or lack of sensitivity of the appropriate choice of language (De Houwer 2009). Parents in particular are concerned that CS may confuse children as they develop their knowledge and skills in different languages. However, recent research in bilingual and multilingual education has provided evidence that CS not only can be used as an effective pedagogical strategy for teaching and learning (Canagarajah 2011) but also should be seen as a sign of linguistic creativity and criticality (Li Wei 2011). Some researchers in bilingual and multilingual first language acquisition have argued that CS is evidence of advanced executive control whereby the child justify his or her language choice to manage the communicative demand (Genesee 2003; Zhu Hua and Li Wei 2005). Their arguments have

been backed up by extensive linguistic analyses of the complex structures of CS which suggest that the ability to switch between languages in conversational interaction requires high linguistic knowledge as well as sociolinguistic sensitivities (Gardner-Chloros 2009).

In an innovative study of the attitudes towards CS of the London Greek Cypriots, Gardner-Chloros, McEntee-Atalianis and Finnis (2005) revealed important variations. Informants from lower occupational groups had the most favourable attitudes towards CS; in fact, the more educated the respondents (undergraduates and postgraduates), the less favourable their attitude towards CS. The younger respondents disapproved less of CS, and saw it as more advantageous, than the older ones. In the meantime, several significant differences were found between attitudes among Cypriots in London and in Cyprus itself even though the language combination was the same. Overall, CS seemed to be gaining acceptability within the London Greek Cypriot community, as cultural hybridity became more commonplace and, in some cases, even fashionable.

Pena (2004) investigated what 98 first-, second-generation members of the Spanish-Galician community in London thought of code-switching. Interviews and questionnaires revealed that the first generation had negative perceptions of CS, explaining that they never used it with their children, and tried to discourage them from using CS as they felt it was 'a symptom of not having competence' in their languages (153). Most members of the second generation also expressed negative views about CS, while, ironically, about half of them where engaging in CS in their interaction with the researcher. The majority view was that CS betrayed a lack of competence in the languages. A small group of 9 participants were happy to use CS between Galician, Spanish and English because it allowed them to distinguish themselves from both the Spanish speakers and the English. All of these 9 participants had had linguistic training at university. Participants also reported a shift in attitudes towards CS over the years in London: as teenagers they absolutely avoided it, using English in order to fit in, but becoming prouder of their linguistic heritage, and CS as they became older.

Dewaele (2010) reported significant positive relationships between levels of self-perceived competence in the L2 and L3 of adult multilinguals and self-reported frequency of CS which led to the conclusion that CS is 'not an indication of a deficit in the LX but on the contrary a characteristic of participants who feel proficient in their LXs' (201).

Our previous research – based on the same sample that will be used in the present study- has provided evidence that self-reported frequency of CS is subject to a great amount of individual variation (Dewaele and Li Wei 2013b). Participants who grew up and worked in a multilingual environment, knew many different languages, which they learnt from a young age and who had advanced proficiency in various languages reported significantly more frequent CS. Female participants, extraverts, and participants with high Cognitive Empathy, also reported significantly higher frequency of CS.

In the present study we focus on the variables that have been found to be significant in the self-reported frequency of use of CS, e.g. prior and current linguistic practices, age, gender, and education. Our overall research question is whether the same variables also affect attitudes towards CS? We add

personality traits which have not been extensively investigated in relation to CS, but have been found to be significant in our parallel study (2013b).

Personality traits

Personality traits are hierarchically organized with five broad, independent dimensions at the summit and a larger number of more specific lower-order traits (Pervin et al. 2005). We will focus on the first two dimensions out of the so-called 'Big Five' (Pervin et al. 2005) which may be linked with attitudes towards CS: Extraversion versus Introversion and Neuroticism versus Emotional Stability[i]. We will also discuss two 'lower-order' traits, namely for Tolerance of Ambiguity (TA) and Cognitive Empathy (CE).

Extraversion - Introversion

Variation on the Extraversion – Introversion dimension is linked to the amount of cortical arousal, which leads to different behavior, also different communicative behaviour (Dewaele 2012). Extraverts are sociable, gregarious, talkative, impulsive and risk-taking individuals. Introverts are quiet, introspective, reserved individuals who plan ahead and avoid excitement. The extraverts' inclination to take risks seems to extend to their linguistic behavior. They swear more frequently than introverts (Dewaele 2013) and are more willing to use stigmatized speech styles (Dewaele 2012). Dewaele and Li Wei (2013b) using the database on which the present study is based, found that extraverts reported more frequent CS. We thus assume that extraversion is linked to more positive attitudes towards CS.

Neuroticism - Emotional stability

High scorers on Neuroticism (high-N) tend to be ruminators, 'emotionally labile and frequently complain of worry and anxiety, as well as bodily aches' (Pervin et al. 2005, 238). Those who score low on Neuroticism can be described as emotionally stable, calm, and contented. Dewaele (2013) found that high-N individuals (both English L1 users and English foreign language users) reported swearing significantly more in interactions with friends and strangers. Neuroticism has been linked to activity in the limbic system, with high-N individuals being more responsive to threat or stress, and showing slower reaction times in response to negative words in emotional Stroop tests (Pervin et al. 2005, 316). We hypothesise that high-N individuals may be more anxious in dealing with CS.

Tolerance of Ambiguity (TA)

TA has been defined as 'the way an individual (or group) perceives and processes information about ambiguous situations when they are confronted by an array of unfamiliar, complex or incongruent cues (...) The person with low TA experiences stress, reacts prematurely, and avoids ambiguous stimuli. At the other extreme of the scale, however, a person with high TA perceived ambiguous situations/stimuli as desirable, challenging, and interesting and neither denies nor distorts their complexity of incongruity' (Furnham and Ribchester 1995, 179).

Dewaele and Li Wei (2013a) found that mono- and bilinguals scored significantly lower on TA compared to multilinguals. Moreover, participants with higher levels of multilingualism and those who has lived abroad also scored significantly higher on TA. A regression analysis showed that both variables contributed significantly to explaining the variance in TA. We concluded that TA is determined by individuals' social-linguistic-cultural environment and especially by the experience of having to survive in a foreign cultural and linguistic environment. A prolonged stay in a new environment requires a sustained and conscious effort to acquire the new local rules governing communication and social interaction. TA was not linked to more frequent self-reported CS (Dewaele and Li Wei 2013b).

Cognitive empathy (CE)

Empathy has been defined as 'the 'glue' of the social world' (Baron-Cohen and Wheelright 2004, 193). It refers to the ability to empathise, to understanding what other people might be thinking or how they might be feeling. People with high levels of empathy are better at understanding the intentions of others, are more accurate in predicting their behaviour, and are better able to recognise the emotion of their interlocutor.

Dewaele and Li Wei (2012) investigated the relationship between multilingualism and CE among mono- and multilinguals. A significant positive correlation emerged between multilingualism and CE. Intense multilingual practice seems to make multilinguals more skilful in conversations as they learn to see the world from their interlocutor's point of view. It is possible that the ability to empathise with a multilingual interlocutor might be linked to more positive views of CS, as this is a way of highlighting the specific links between the speaker and the interlocutor. CE was linked with higher self-reported frequency of CS in Dewaele and Li Wei (2013b).

Hypotheses

The present study aims to test the following hypotheses:

1) The link between personality traits and attitudes towards CS. We expect participants who score high on Extraversion, TA, CE and low on Neuroticism to have more positive attitudes towards CS.
2) The link between prior and current linguistic practices and attitudes towards CS. We expect participants who grew up in a linguistic and ethnic diverse environment have more positive attitudes towards CS. We also expect participants who know more languages, who have advanced knowledge of several languages, who grew up with two or more languages before age 3, and who lived abroad to have more positive attitudes towards CS. Finally, we expect participants who work in multilingual and multi-ethnic environments to have more positive attitudes towards CS.
3) The link between sociobiographical variables and the attitudes towards CS. Gender, age and education level could be linked to attitudes towards CS, but it is hard to predict the direction.

4) The relationship between attitudes towards CS and self-reported frequency of use of CS. We expect positive attitudes to be linked to more frequent use.

Method

Participants

A total of 2070 multilinguals (1535 females, 428 males[ii]) filled out the questionnaire. The mean age was 34.6 years (*SD*=12.1). Participants are generally highly educated with 31 having a high school diploma, 633 a Bachelor's degree, 757 a Master's degree and 644 a PhD.

The participants reported 204 different nationalities, including many participants with double nationalities. The largest group came from the USA (*n*=492), followed by British (*n*=302), Dutch (*n*=135), Belgian (n=84), German (*n*=83), in decreasing order there were smaller groups of Canadians, Poles, French, Spaniards, Chinese, Croatians, Turks, Swiss, Portuguese, Swedes, Italians, Japanese (all more than 25 members), and 187 other nationalities.

English was the most frequent L1 (*n*=841), followed by Dutch (*n*=188), French (*n*=148), Spanish (*n*=124), German (*n*=116), in decreasing order there were smaller groups of native speakers of Polish, Chinese, Portuguese, Arabic, Croatian, Russian, Turkish, Italian, Japanese, Swedish (all *n*<25), and many smaller groups.

The most frequent L2 was English (*n*=881) followed by French (*n*=456), Spanish (*n*=245), German (*n*=137), etc. The pattern was different for the L3 with French coming first (*n*=412), followed by German (*n*=314), English (*n*=249) and Spanish (*n*=215), etc. The most frequent L4s were German (*n*=198), Spanish (*n*=189), French (*n*=168). The most frequent L5 was Spanish (*n*=100), Italian (*n*=67), and French (*n*=44).

Mean age of acquisition of the L2 was 10.1 years, this increased to 15 years for the L3, 18.4 years for the L4 and 21.9 years for the L5.

The sample consists of 36 monolinguals, 375 bilinguals, 543 trilinguals, 539 quadrilinguals, 347 pentalinguals, 139 sextalinguals, 54 septalinguals, 20 octalinguals, 9 nonalinguals, 5 participants knew 10 languages, and 1 participant reported 12 languages. A single category was created including all participants with six or more languages. A majority (*n*=1788) reported having one single L1, a small proportion reported growing up with two or three L1s (*n*=282).

We used participants' information on self-perceived proficiency in these languages to develop a global measure of multilingualism, first presented in Dewaele and Stavans (2012). The 'global proficiency score' is the sum of self-perceived proficiency scores for oral (maximum score 5) and written proficiency (maximum score 5) collected on 5-point Likert scales in up to 6 languages. Such a measure is potentially useful to distinguish sextalinguals with limited knowledge of three languages from trilinguals with advanced knowledge of 3 languages (Dewaele and Stavans 2012). We thus avoid the lack of clarity inherent to labels such as 'bilingual, trilingual', where every language is included, despite the fact that knowledge in some can be very limited. Global proficiency scores varied between 5 and 55, with a mean of 25.5 (*SD* = 8.0).

Participants with scores that were more than 1 *SD* below the mean were categorised as 'Low Proficiency' (*n* = 277), those with scores that were more than 1 *SD* about the mean were categorised as 'High Proficiency' (*n* = 279), while the remaining participants were categorised as 'Medium Proficiency' (*n* = 1512). We feel also that it makes sense to look for a link between a global language measure and attitudes towards CS, rather than measures for particular languages (L1, L2, L3...).

Mean score for ethnic and linguistic diversity during the participants' childhood was rather low (*M* = 1.3, *SD* = 1.23, on a 5-point Likert scale). However, the mean score for ethnic diversity in the participants' workplace was higher (*M* = 2.5, *SD* = 1.2). The mean score for multilingual diversity at work was a little higher still: (*M* = 2.6, *SD* = 1.2).

The majority of highly educated, female participants is quite typical in web-based language questionnaires (Wilson and Dewaele 2010).

Instruments

The questionnaire was an open-access survey, advertised through several listservs, targeted emails to multilingual colleagues and their students in academic institutions (Dewaele and Li Wei 2012). The introductory paragraph stated: 'The aim of this research is to help us better understand the link between personality and linguistic behavior of people knowing one or several languages'. It remained online between December 2010 and March 2011 and attracted 2158 valid responses from mono- and multilinguals across the world. Because participants left occasional questions blank, totals for specific variables can vary.

The questionnaire started with a sociobiographical section with questions about sex, age, nationality, language history and present language use. The questionnaires were anonymous. The research design and questionnaires received ethical clearance from the appropriate committee at Birkbeck.

The questionnaire included a section on personality traits: items for Extraversion and Neuroticism extracted from the short version of the Eysenck Personality Questionnaire (EPQr) (Eysenck, Eysenck and Barrett 1985). Participants filling out the EPQr are invited to tick either 'yes' or 'no' for 12 items for each dimension. One item for Extraversion is for example: 'Can you get a party going?'; and an item for Neuroticism is 'Are you a worrier?' Mean scores on the dimensions were as follows: Extraversion: *N* = 1932, *M* = 7.6, *SD* = 3.4; Neuroticism: *N* = 1931, *M* = 5.1, *SD* = 3.2. Internal consistency of the two dimensions, as measured by Cronbach alpha coefficient, was high for Extraversion (0.84) and for Neuroticism (0.81). Participants with scores that were more than 1 *SD* below the mean were categorised as 'Introverts' on the Extraversion dimension, and 'low N' on the Neuroticism dimension. Those with scores ranging from 1 *SD* below the mean to 1 *SD* above the mean were categorised as 'Ambiverts', and 'medium N' on the Neuroticism dimension. Finally, those with scores that were more than 1 *SD* above the mean were categorised as 'Extraverts' and 'High-N' on the Neuroticism dimension. As a result we have 407 Introverts, 1023 Ambiverts and 502 Extraverts. For Neuroticism, we have 485 Low-N, 1098 Medium-N and 348 High-N participants.

Herman, Stevens, Bird, Mendenhall and Oddou (2010) created the Tolerance for Ambiguity Scale (TAS) which 'can be used in cross-cultural research and practice to assess individual TA' (2010, 62). We

used 11 items of out the original 12-item TAS scale and made some minor stylistic adaptations[iii]. The items had to be rated on a 5-point Likert scale anchored with ‘‘Strongly Disagree’’ to ‘‘Strongly Agree’’. One item is for example ‘I can be comfortable with nearly all kinds of people’. A Cronbach alpha analysis revealed modest but sufficient internal consistency reliability: 0.64. Mean score for TA is 28.9, *SD* = 5.5[iv]. Participants were also categorised in three groups (low TA, medium TA, high TA), following the procedure set out earlier. As a result, 285 participants were labelled ‘low TA’, 1365 ‘medium TA’ and 283 ‘high TA’.

We selected five items with the highest factor loadings from the scale in Lawrence et al. (2004) to measure CE. The items had to be rated on a 5-point Likert scale (ranging from “Strongly Disagree’’ to ‘‘Strongly Agree’’). One item was: ‘I am good at predicting how someone will feel’. Mean score is 18.5 (*SD* = 3.5). A Cronbach alpha analysis revealed good internal consistency reliability: 0.84. Following the procedure explained above, we distinguished three groups: low CE (n = 237), medium CE (n = 1426), and high CE (n = 273).

Data about the participants’ attitudes towards CS was elicited through the following closed question: ‘To what extent do you agree with the following statements about language switching?’

1) It is a sign of incomplete linguistic competence
2) It annoys me when people switch between languages I don’t know in my presence
3) It displays a distinct multicultural identity
4) It is a sign of arrogance
5) It is a way to show solidarity with a particular culture

Participants were asked to choose a response on a 5-point Likert scale (1 = not at all 2 = not especially 3 = so-so 4 = quite a lot 5 = very much).

Where necessary, the scores were reversed so that a higher score indicates a more positive attitude towards CS. A Cronbach alpha analysis revealed a modest level of internal consistency (alpha = .60). Mean score was 19.2 (*SD* = 3.0), with scores ranging form 2 to 25 (the highest possible score). A one-Sample Kolmogorov-Smirnov Test revealed that the scores were not normally distributed (Kolmogorov-Smirnov Z = 4.1, $p < .0001$). The complete distribution is presented in Figure 1. The distribution is skewed toward the positive end of the scale, with 13.5% of participants having a score of 19. As a consequence, we have used non-parametric statistical techniques[v].

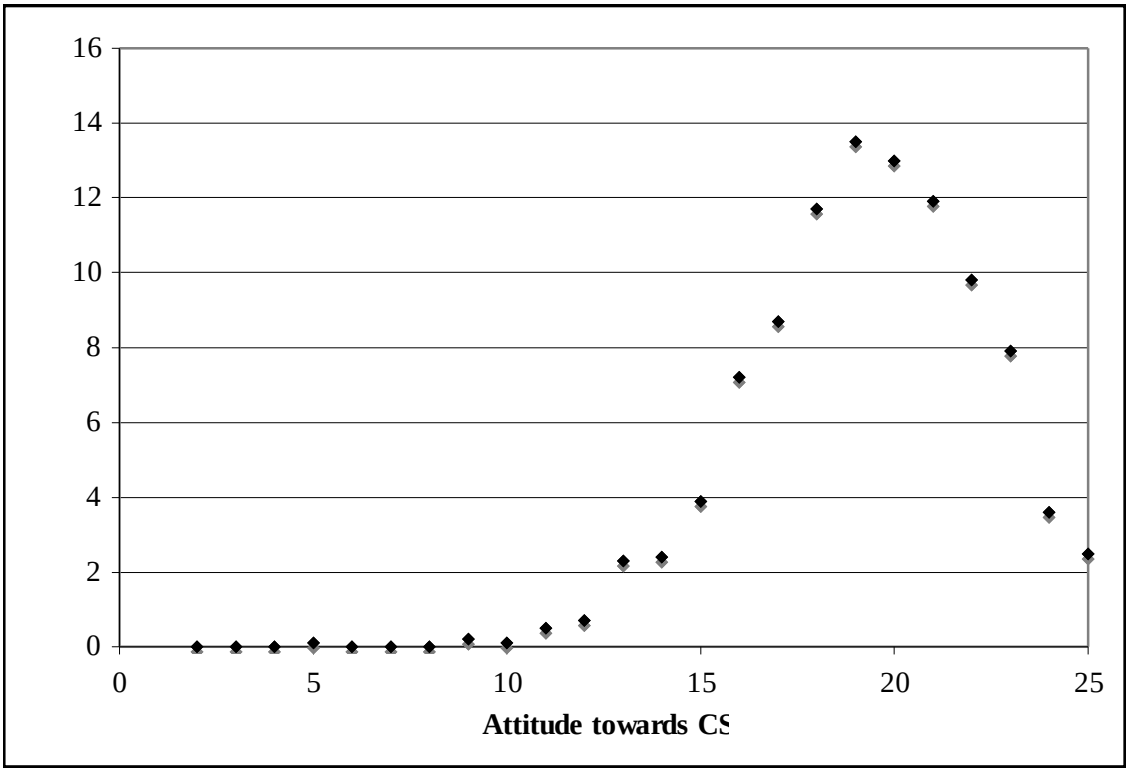

Figure 1: Distribution of CS attitude scores

The use of on-line questionnaires

On-line questionnaires allow the collection of large amounts of data automatically at a fraction of the cost and time of 'pen and paper' equivalents (Buchanan 2007). They also permit researchers to reach larger and diverse samples from all over the world through snowball sampling. This type of convenience sampling is quite similar to non-web-based research. In fact, Gosling et al. (2004) argue that the advantages outweigh the disadvantages in terms of sampling web-based research. Internet samples may not be representative of the general population, but they are typically more diverse in terms of gender, age, race, socio-economic status and geographical location than the pen-and-paper samples, which are typically university students participating in the research to gain a course credit. Moreover, personality profiles and socializing patterns are very similar. Finally, online versions of traditional questionnaires do not compromise the psychometric properties of such measures (Denissen, Neumann and van Zalk 2010).

Wilson and Dewaele (2010) have argued that in multilingualism research participants do not have to represent the 'general population' as they need to meet specific linguistic criteria, and must be able and willing to engage with relatively abstract questions on language preferences and use (108). Participants in this type of questionnaire need high levels of metalinguistic and metacognitive awareness and must be really motivated to fill out the questionnaire accurately (119). Internet-based questionnaires have also been shown to have a disinhibiting effect on participants, reducing social desirability which leads to increased levels of honesty (and therefore higher validity in the case of self-report) (Joinson et al. 2008). Finally, a sample of

more than 2000 multilinguals from all over the world strengthens ecological validity, as the effects of local social, political and historical factors linked to particular languages or linguistic practices are strongly diluted (Wilson and Dewaele 2010).

Results

The Kruskal-Wallis tests showed that Extraversion had no effect on attitudes towards CS (Table 1). However, Neuroticism had a strong effect on attitudes towards CS (Table 1), with those scoring closest to the Emotional Stability end of the dimension reporting more positive attitudes than their high-N peers (see figure 2). TA also had a significant effect on attitudes towards CS, with participants scoring high on this dimension reporting more positive attitudes towards CS. CE had a similar significant effect on attitudes towards CS, with high CE participants feeling much more positive about CS.

Table 1. The effect of personality variables, linguistic history and current practice on attitudes towards CS (Kruskal-Wallis Chi^2 values)

Independent variable	*Attitudes towards CS*
Extraversion (df = 2)	3.8
Neuroticism (df = 2)	9.2*
Tolerance of Ambiguity (df = 2)	14.6**
Cognitive Empathy (df = 2)	11.9*
Number of languages known (df = 5)	10.8
Global Proficiency (df = 2)	4.8
Ethnic / linguistic diversity during childhood (df = 4)	27.3***
Multilingualism in work environment (df = 4)	0.4
Ethnic diversity in work environment (df = 4)	29.9***
Years abroad (df = 2)	9.5*

p < .05, ** p < .001, *** p < .0001

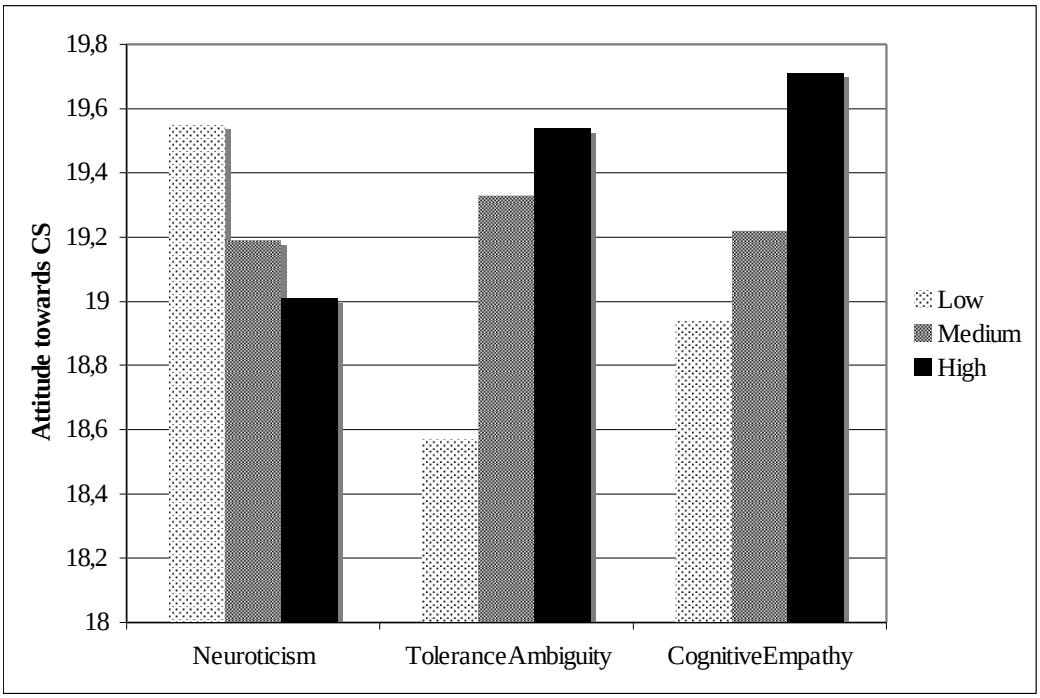

Figure 2: The effect of personality traits on attitudes towards CS (means)

The next cluster of variables is linked to participants' linguistic history and current linguistic practices. The Kruskal-Wallis tests revealed that the number of languages known by participants had only a marginal effect ($p < .055$) on attitudes towards CS (Table 1). The scores of monolinguals, bilinguals,

trilinguals are quite similar (hovering around a mean of 19.2) with those of the pentalinguals and those knowing 6 or more languages rising to a mean of 19.4 and 19.7 respectively.

No significant effect was found for Global proficiency (p = .09) on attitudes towards CS (Table 1). The low group had a mean score of 19.1, the medium group had a mean score of 19.2, while the High group had a mean score of 19.6 all with comparable *SDs*.

The Kruskal-Wallis test showed that participants who grew up in an ethnically and linguistically diverse environment reported significantly more positive attitudes towards CS. The degree of ethnic diversity in the work environment of participants – but not the degree of multilingualism in that environment - also had a significant positive effect on attitudes towards CS (Table 1 and Figure 3).

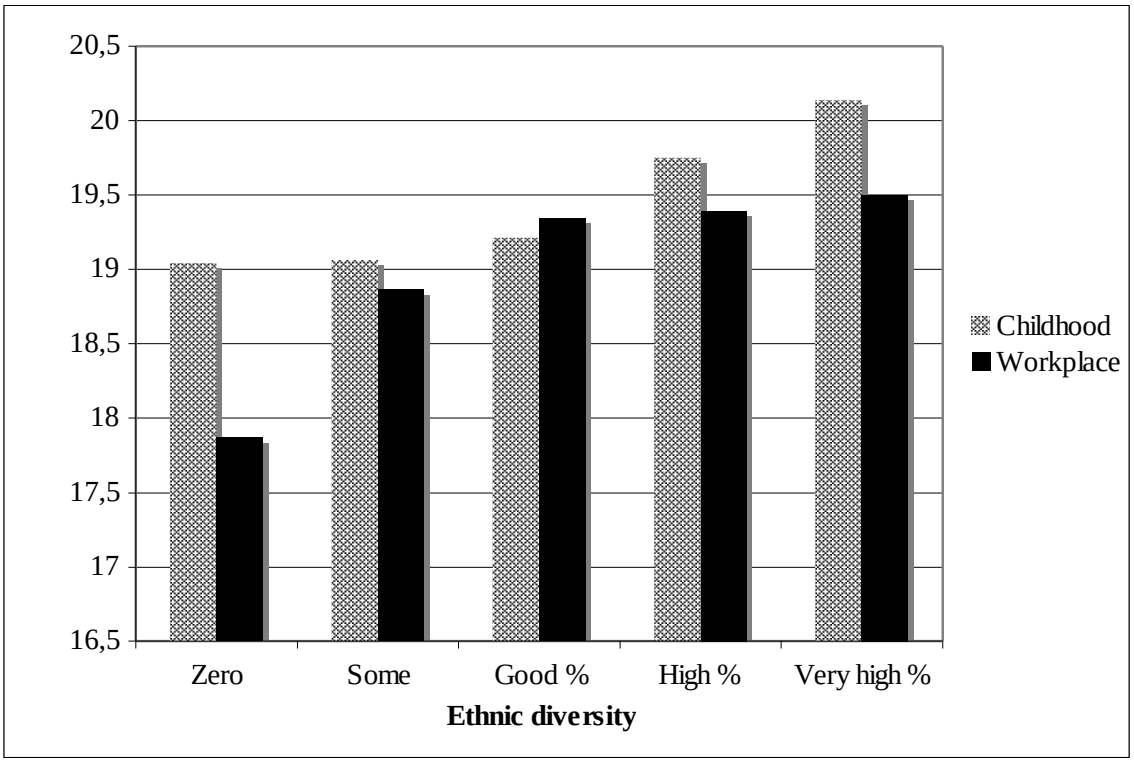

Figure 3: The effect of ethnic diversity in childhood, of ethnic diversity in the workplace on attitudes towards CS (means)

The Kruskal-Wallis test showed that having living abroad had a significant positive effect on attitudes towards CS. Also, those having lived abroad for more than a year scored highest (M = 19.7), followed by those who remained abroad for not more than one year (M = 19.4), with those who had not lived abroad having the lowest score (M = 19.2) (table 1).

A Mann-Whitney test showed significant differences between early and later bi- and multilinguals. The former had significantly more positive attitudes towards CS than the latter (M = 19.8 versus M = 19.1) respectively, Mann-Whitney Z = -3.25, p < .001).

The next research question deals with the effect of sociobiographical variables such as age, gender and education level.

A Kruskal-Wallis analysis showed a significant effect of age group on attitudes towards CS (Kruskal-Wallis $Chi^2 = 20.6$, $p < .001$). A look at the means per age group shows that those in their forties scored highest with those in their thirties, fifties and sixties scoring at similar levels on attitudes towards CS (Table 2).

A Mann-Whitney test showed that the female participants had significantly more positive attitudes towards CS (Mann-Whitney $Z = -4.63$, $p < .0001$; *M* Males = 18.6; *M* Females = 19.4).

The Kruskal-Wallis analyses reveal a significant effect of education on attitudes towards CS (Kruskal-Wallis $Chi^2 = 59.1$, $p < .0001$). A curvilinear relationship appeared: participants with lower levels of education had more positive attitudes towards CS, holders of BAs had the least favourable attitudes and participants with MAs and PhDs expressed the most positive attitudes towards CS (Table 2).

Age	Mean	SD	N	Education	Mean	SD	N
Teens	18.6	2.6	88	High school	19.1	2.7	30
Twenties	19.0	2.9	779	BA	18.6	2.9	632
Thirties	19.4	3.1	560	MA	19.3	3.0	756
Forties	19.6	2.9	342	PhD	19.9	3.0	644
Fifties	19.2	3.2	193				
Sixties	19.4	3.5	93				

Table 2: The effect of age and education on attitudes towards CS

The final research question dealt with the relationship between attitudes towards CS and self-reported use of CS. A Spearman Rank correlation analysis revealed a positive relationship between attitudes towards CS and self-reported frequency of use of CS with family members ($N = 2040$, $Rho = 0.16$, $p < .0001$), with friends ($N = 2059$, $Rho = 0.14$, $p < .0001$), with strangers ($N = 2040$, $Rho = 0.06$, $p < .007$), but the relationship is only marginally significant with colleagues ($N = 2038$, $Rho = 0.04$, $p = .092$).

Discussion

The significant links between the personality traits and attitudes towards CS suggests that how we perceive language behaviour partly escapes our conscious control as we do not choose our personality. So it seems that lower levels of Neuroticism and higher levels of TA and CE all contribute to having a more positive attitudes towards CS. However, Extraversion turned out to have no effect. Being more gregarious and more sociable is thus not linked with a stronger appreciation of CS, although it has been linked with a higher frequency of self-reported use of CS (Dewaele and Li Wei 2013b). Emotionally stable people suffer less from worries or anxiety and have more positive attitudes towards CS. Dewaele and McCroskey (2013) found that Emotionally stable individuals enjoyed Foreign Accents (FA) more than those individuals closer to the Neurotic end of the dimension. We speculated that the latter are more likely to perceive the FA as an

additional source of worry in the interaction. The same reasoning could be applied for attitudes towards CS, individuals that are more Emotionally stable are less worried about CS leading to communication breakdown and the anticipation of mutual embarrassment.

People who are very tolerant of ambiguity have more positive attitudes towards CS. They have also been found to be more appreciative of a FA (Dewaele and McCroskey 2013) but they do not report using more CS (Dewaele and Li Wei 2013b). They may enjoy the unfamiliarity in language choices. On the other hand, people with lower TA are less inclined to enjoy CS, possibly because they feel that CS sneaks ambiguity in the interaction.

People who score high on CE have more positive attitudes towards CS. They have also been found to be more appreciative of a FA (Dewaele and McCroskey 2013) but they do not report using more CS (Dewaele and Li Wei 2013b). They may feel that CS is a good way to strengthen the social connection and the 'rapport' with the interlocutor by highlighting the common linguistic ground.

The most surprising finding is that high levels of multilingualism (knowing more languages, and knowing them really well) is only loosely related to attitudes towards CS. One would expect that experienced multilinguals are used to communicate with people from various linguistic and cultural backgrounds, and are therefore exposed to regular CS between different languages. Why don't they appreciate CS more? Is it possible that they pride themselves in not having to use CS because of their advanced proficiency? Might these highly multilingual participants unconsciously judge that CS is a symptom of lacking competence (cf. Pena 2004)?

Another possibility is that our categorisation of global levels of frequency of use of multiple languages and global proficiency in three broad categories did not allow us to catch a nonlinear relationship between these variables and attitudes towards CS.

The polynomial trendline in the scatterplot of attitudes towards CS and global proficiency among our 2080 participants is indeed curvilinear (figure 4). It seems that a good proportion of participants with mid-range global proficiency values (between 20 and 40) had more negative attitudes towards CS than those at the lower and higher end of the scale (see figure 4).

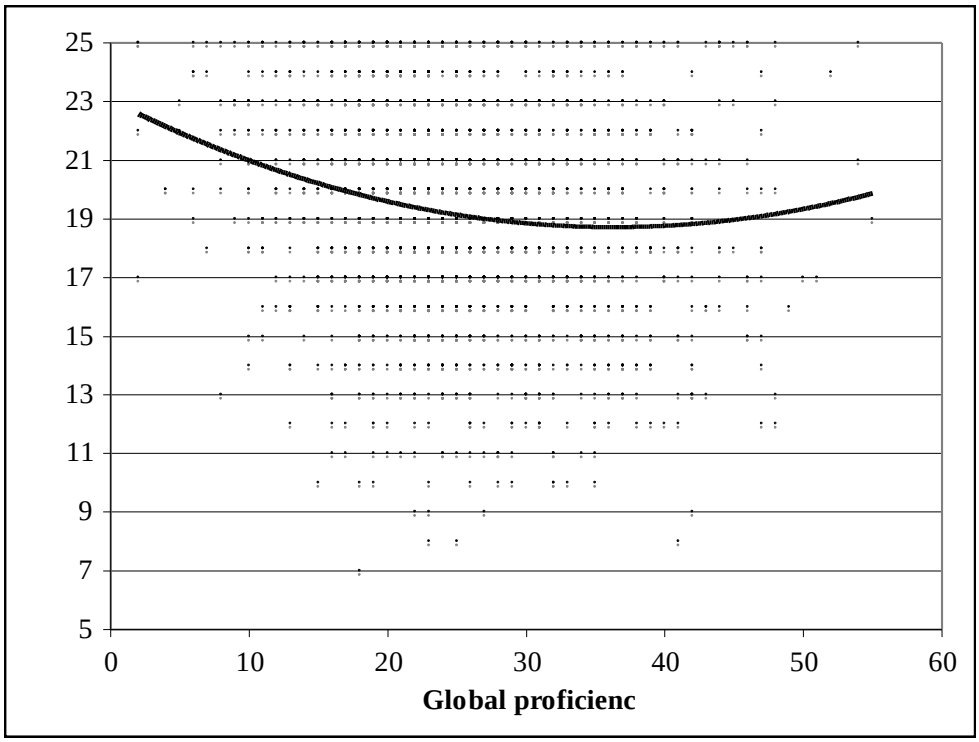

Figure 4: Scatterplot with attitudes towards CS and Global proficiency

A number of factors linked to participants' linguistic history and current practice were also linked to attitudes towards CS. Those who had grown up in highly multilingual and ethnically diverse environments reported much more positive attitudes towards CS. It thus seems that the linguistic practices picked up in childhood resonate for life. The same participants also reported using CS more frequently (Dewaele and Li Wei 2013b).

The finding of a positive link between the degree of multilingualism and ethnic diversity in the work environment and attitudes towards CS is less surprising. Indeed, if CS is common in this particular community of practice it will be perceived as something 'normal'. Dewaele and Li Wei (2013b) found a similar pattern in self-reported frequency of use of CS, with participants in highly multilingual and ethnic diverse work environments reporting using more CS. A similar explanation could account for the more positive attitudes towards CS by people who have spent time abroad. Having lived abroad boosts TA (Dewaele and Li Wei 2013a), and will contribute to a realisation that one's CS patterns may have evolved.

The significant relationship between age and attitudes was unexpected. Indeed, younger age groups (teens and those in their twenties) did not appreciate CS as much as the older age groups. The relationship might be indirect, and linked more to the work environment of older participants: a Pearson Chi^2 analysis revealed a significant interaction between ethnic diversity in the workplace and age group, with those aged between 40 and 59 working in more diverse environments ($N = 2080$, $Chi^2 = 53.5$, $df = 20$, $p < .0001$). Gardner-Chloros et al. (2005) found just the opposite pattern in the Greek-Cypriot community in London,

with the younger generation being more appreciative of CS. It thus seems that views on CS within particular bilingual communities can differ substantially from the wider international bi- and multilingual community.

Our female participants have much more positive attitudes towards CS. This is surprising considering that sociolinguistic research usually reports that women speak more standard-like than men. The finding does complement earlier observations, namely female participants reporting to use CS more frequently than male participants in interactions with friends, family and colleagues (Dewaele and Li Wei 2013b). This is turn confirmed earlier research where female participants reported using CS significantly more with friends (Dewaele 2010).

Education level was found to have a significant effect, with less educated participants being more positive towards CS, with BA-educated participants being most negative and more highly educated participants, (MA and PhD) being more positive. Gardner-Chloros et al. (2005) reported a partly similar pattern, with a linear decrease in appreciation of CS at higher levels of education. It is not clear whether the "postgraduates" in their sample included participants with PhDs. Dewaele and Li Wei (2013b) also found that highly educated participants reported more frequent CS with colleagues, possibly because of the more multilingual work environment they function in.

The final research question dealt with the link between attitudes and self-reported use of CS. Contrary to what Pena (2004) found, our participants were consistent: those who had more positive attitudes towards CS also reported using CS more frequently, though the relationship was only marginal with colleagues. It is possible that in an environment where CS is the norm, attitudes toward CS are no longer linked to frequency of use – because there is no choice.

To conclude this discussion it is worth pointing out that our research design is not without its limitations. The first one is that choosing a score on a Likert scale to reflect attitudes requires a certain degree of abstraction. Berthele (2012) showed that attitudes towards CS changed significantly depending on whether the person doing the CS was a fellow Swiss or a foreign national. In other words, attitudes towards CS are linked to who is doing it in what context. In defence of the Likert scale scores, we can refer to all the work done by personality psychologists using a similar approach to collect data on self-reported habitual behaviour in a variety of situations (Pervin et al. 2005). A second limitation, following from the first one is that we had no information on the type of monolingual or multilingual in our sample: where they first or second or third generation immigrants? Where they foreign language users in their country of origin? Pena (2004) showed that the attitudes of her first and second-generation Galicians in London towards CS were quite different. In other words, we are aware that there are many other potentially relevant sources of variation in our data. A third limitation is the strong proportion of highly educated participants. Indeed, as Pena (2004) showed, educated multilinguals are more likely to be 'conscientized' about acknowledging marginalized languages and its role in CS practices.

We have explained that these are typically the people most willing and able to fill out this challenging exercise on linguistic practices and attitudes. Dewaele (2010) reported how attempts to gather data through questionnaires and interviews from multilinguals with low levels of education failed miserably

because the potential participants were highly suspicious, perceiving the instrument and the questions as a threat, or had difficulty in grasping some of the wording. Questions about CS were not answered, probably because they feared being exposed as deficient users of their languages, and no amount of pleading convinced them to participate (44). A final limitation is that our design did not include the gathering of qualitative data. We agree with Pena (2004) that talking to participants is the best way to probe for the reasons underlying their attitudes and linguistic behaviour.

We do feel that the advantages of the design outweigh its limitations: the large number of monolinguals and multilinguals, coming from a huge variety of different places and possessing a large amount of different languages, is excellent for ecological validity. Our aim was establish general patterns, including the effect of personality, something that interviews would not help us reveal.

Conclusion

The present paper set out to identify the independent variables that are linked to the attitudes that people have towards CS. Some exploratory research has been carried out on this topic, typically on small samples, with a relative small number of independent variables linked to linguistic practices and ethnic identity (Berthele 2012, Gardner Chloros et al. 2005; Pena 2004). Our large-scale investigation into attitudes towards CS has allowed us to uncover some patterns of variation that have never been reported before.

The most striking finding is undoubtedly that some personality traits are linked to attitudes towards CS. Indeed, participants who scored high on Emotional stability, TA and CE had significantly more positive attitudes towards CS. It thus seems that emotionally stable people with a strong capacity to empathise with interlocutors from different linguistic backgrounds and sympathy for the linguistically unexpected enjoy CS more.

Another surprising finding was that higher degrees of multilingualism were not automatically linked to more positive attitudes towards CS. A closer look at the data revealed non-linear, curvilinear relationships, with participants at the lowest and highest levels of multilingualism having more positive attitudes than the middle groups.

Less surprising were more the positive attitudes towards CS of participants who had grown up, lived or worked in multilingual and ethnically diverse environments, or who had lived abroad. Sociobiographical variables were also linked to attitudes towards CS: female participants had significantly more positive attitudes than the male participants. Non-linear relationships appeared for education, with those at either end of the dimension having more positive attitudes, and for age, where the youngest group (teenagers) had the least favourable attitudes and where those in the middle of this dimension (forties) had the most positive attitudes, with the older groups being less positive again. Finally, we found that participants with more positive attitudes towards CS also reported using CS more frequently with most interlocutors.

These findings have important implications for the design of future studies that concern bilingual and multilingual speakers. As we pointed out at the beginning of this article, there is a distinctive lack of consideration in experimental design of psycholinguistic studies of CS of inter- and intra-speaker variations

in attitudes. Whilst attention is given to the speaker's gender, age, language proficiency, and, occasionally, frequency of CS, their attitudes towards the very linguistic phenomenon that is being studied are rarely taken into account. The complex variations in attitudes towards CS as seen in the present study will have significant effects on CS practices (Dewaele and Li Wei, 2013b). They need to be considered seriously and systematically in the design of future studies.

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[i] The other three are Conscientiousness, Agreeableness and Openness-to-Experience.

[ii] 107 participants did not disclose their gender.

[iii] The item that was left out dragged the Cronbach alpha value down in the pilot study.

[iv] For a more detailed discussion of this instrument, see Dewaele and Li Wei, 2013a.

[v] Unfortunately there is no non-parametric equivalent of multiple regression analysis which would have allowed us to measure the relative impact of all independent variables together.